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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
08/902,371	07/29/97	BHATIA	R 42390.P4624

MM51/1110  
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EXAMINER  
LEA EDMONDS, L

ART UNIT  
2835

DATE MAILED: 11/10/98

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

## Office Action Summary

Application No. <b>08/902,371</b>	Applicant(s) <b>Rakesh Bhatia</b>
Examiner <b>Lisa Lea-Edmonds</b>	Group Art Unit <b>2835</b>



Responsive to communication(s) filed on Jul 29, 1997

This action is FINAL.

Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

### Disposition of Claims

Claim(s) 1-24 is/are pending in the application.

Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

Claim(s) \_\_\_\_\_ is/are allowed.

Claim(s) 1-24 is/are rejected.

Claim(s) \_\_\_\_\_ is/are objected to.

Claims \_\_\_\_\_ are subject to restriction or election requirement.

### Application Papers

See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

The drawing(s) filed on Jul 29, 1997 is/are objected to by the Examiner.

The proposed drawing correction, filed on \_\_\_\_\_ is  approved  disapproved.

The specification is objected to by the Examiner.

The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. § 119

Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

All  Some\*  None of the CERTIFIED copies of the priority documents have been received.

received in Application No. (Series Code/Serial Number) \_\_\_\_\_.

received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_.

Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

### Attachment(s)

Notice of References Cited, PTO-892

Information Disclosure Statement(s), PTO-1449, Paper No(s). 3 and 4

Interview Summary, PTO-413

Notice of Draftsperson's Patent Drawing Review, PTO-948

Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: element numbers 740, 682, 684, 600, 604, and 306. Correction is required.
2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters "720" and "721" have both been used to designate fan assembly. Correction is required.
3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "721" has been used to designate both the fan housing and the fan assembly. Correction is required.

### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
5. Claims 8, 9-11, and 16-19, recites the limitation "fan" in line 2 for claims 8, 9, 16, 17; line 5 for claims 11 and 19; and line 4 for claims 10 and 18. There is insufficient antecedent basis for this limitation in the claims.

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***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1, 3 and 4 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Penniman et al.. With respect to claims 1, 3, and 4, Penniman et al. teaches a portable computer having a keyboard with a thermally conductive support plate (28), a flat heat pipe (34) which covers a portion of the bottom surface of the keyboard support plate, and a heat generating device (42) thermally coupled to the heat pipe.

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Penniman et al. as applied to claim 1 above, and further in view of Carlsten et al.. Penniman et al. teaches a portable computer as claimed in claim 1, however, Penniman et al. lacks the teaching of a flat heat pipe

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having micro channels. Carlsten et al. teaches a flat heat pipe having micro channels (see for example any of figures 1-6). It would have been obvious to one of ordinary skill in the art at the time the invention was made to integrate the flat heat pipe structure of Carlsten et al. with the teachings of Penniman et al. to increase fluid flow in the flat heat pipe.

10. Claims 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Penniman et al. as applied to claim 1 above, and further in view of Ohashi et al.. With respect to claims 5-7, Penniman et al. teaches a portable computer as claimed in claim 1. However, Penniman et al. lacks the teaching of an air moving means. Ohashi et al. teaches a fan (4) and a fin (45) being used to move air throughout a portable computer for cooling. It would have been obvious to one of ordinary skill in the art at the time the invention was made to integrate the fan structure of Ohashi et al. with the teachings of Penniman et al. to increase air flow in the portable computer.

11. Claims 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Penniman et al. as applied to claim 5 above, in view of Ohashi et al., and in further view of Dinh et al.. With respect to claims 8-11, Penniman et al. teaches a portable computer as claimed in claim 1, and Ohashi et al. teaches a fan and a fin as claimed in claim 5. However, Penniman et al. as modified by Ohashi et al. lacks the teaching of a temperature sensing device and a control circuit for switching the fan on and off . Dinh et al. teaches a temperature dependent fan control circuit which senses the heat form any heat producing element within a personal computer and adjusts the voltage applied to the fan. It would have been obvious to one of ordinary skill in the art at the time the invention was made to integrate the temperature dependent fan control circuit of Dinh et

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al. with the teachings of Penniman et al. as modified by Ohashi et al. to protect the portable computer from over heating and/or damage due to excess heat.

12. Claims 12, 14, 15 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Penniman et al. et al. in view of Ohashi et al.. With respect to claims 12, 14, 15, and 20, Penniman et al. teaches a portable computer having a keyboard with a thermally conductive support plate (28), a flat heat pipe (34) which covers a portion of the bottom surface of the keyboard support plate, and a heat generating device (42) thermally coupled to the heat pipe. However, Penniman et al. lacks the teaching of an air moving means. Ohashi et al. teaches a fan (4) and a fin (45) being used to move air throughout a portable computer for cooling. It would have been obvious to one of ordinary skill in the art at the time the invention was made to integrate the fan structure of Ohashi et al. with the teachings of Penniman et al. to increase air flow in the portable computer.

13. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Penniman et al.<sup>as  
Ohashi; 27</sup> applied to claim 12 above, and further in view of Carlsten et al.. Penniman et al. et al. teaches a portable computer as claimed in claim 12, however, Penniman et al. lacks the teaching of a flat heat pipe having micro channels. Carlsten et al. teaches a flat heat pipe having micro channels (see for example any of figures 1-6). It would have been obvious to one of ordinary skill in the art at the time the invention was made to integrate the flat heat pipe structure of Carlsten et al. with the teachings of Penniman et al. to increase fluid flow in the flat heat pipe.

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14. Claims 16-19 and 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Penniman et al. et al. et al. as applied to claims 12 and 20 above, in view of Ohashi et al., and in further view of Dinh et al.. With respect to claims 16-19 and 21-22, Penniman et al. in view of Ohashi et al. teaches a portable computer as claimed in claims 12 and 20. However, Penniman et al. as modified by Ohashi et al. lacks the teaching of a temperature sensing device and a control circuit for switching the fan on and off . Dinh et al. teaches a temperature dependent fan control circuit which senses the heat form any heat producing element within a personal computer and adjusts the voltage applied to the fan. It would have been obvious to one of ordinary skill in the art at the time the invention was made to integrate the temperature dependent fan control circuit of Dinh et al. with the teachings of Penniman et al. and Ohashi et al. to protect the portable computer from over heating and/or damage due to excess heat.

15. Claims 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Penniman et al. et al. et al. in view of Ohashi et al., and in further view of Dinh et al.. With respect to claims 23 and 24, Penniman et al. teaches a portable computer having a keyboard with a thermally conductive support plate (28), a flat heat pipe (34) which covers a portion of the bottom surface of the keyboard support plate, and a heat generating device (42) thermally coupled to the heat pipe. However, Penniman et al. lacks the teaching of an air moving means. Ohashi et al. teaches a fan (4) and a fin (45) being used to move air throughout a portable computer for cooling. Penniman et al. as modified by Ohashi et al. lacks the teaching of a temperature sensing device and a control circuit for switching the fan on and off . Dinh et al. teaches a temperature

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dependent fan control circuit which senses the heat form any heat producing element within a personal computer and adjusts the voltage applied to the fan. It would have been obvious to one of ordinary skill in the art at the time the invention was made to integrate the fan structure of Ohashi et al. with the teachings of Penniman et al. to increase air flow in the portable computer. It also would have been obvious to one of ordinary skill in the art at the time the invention was made to integrate the temperature dependent fan control circuit of Dinh et al. with the teachings of Penniman et al. as modified by Ohashi et al. to protect the portable computer from over heating and/or damage due to excess heat.

### *Conclusion*

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Note the portable computers with heat pipes of Xie et al., Bhatia et al (5718282, 5646822), Meyer, IV et al., and Toedtman et al.. Also note the flat heat pipes of Feldman Jr., et al., Noren, and Peck.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lisa Lea-Edmonds whose telephone number is (703) 305-0265. The examiner can normally be reached on Monday - Friday from 7:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, L. Feild, can be reached on (703) 308-2710. The fax phone number for this Group is (703) 305-3431,32

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-1782.



LL-E  
  
October 14, 1998

**LYNN D. FEILD**  
**PRIMARY EXAMINER**